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ABSTRACT

These two newsletters of The National Research Center on the Gifted and Talented (NRC/GT) present articles concerned with research on the education of gifted and talented students. The articles are: "NRC/GT: Research Should Inform Practice" (E. Jean Gubbins); "Building a Bridge: A Combined Effort between Gifted and Bilingual Education" (Valentina I. Kloosterman); "Talent Development for Everyone: A Review of 'Developing the Gifts and Talents of All Students in the Regular Classroom'" (Bruce N. Berube); "Gender Differences in High School Students' Attitudes toward Mathematics in Traditional versus Cooperative Groups" (Lisa A. Drzewiecki and Karen L. Westberg); "NRC/GT: The Parent Connection" (E. Jean Gubbins); "A Parent's Guide to Helping Children: Using Bibliotherapy at Home" (Mary Rizza); "Parents, Research, and the School Curriculum" (Mallory Bagwell); and "Cluster Grouping Coast to Coast" (Patricia A. Schuler). Also included are the following brief research summaries: "The Effectiveness of Peer Coaching on Classroom Teachers' Use of Differentiation for Gifted Middle School Students" (Caroline Sarah Cohen); "Effects of Teaching Problem Solving through Cooperative Learning Methods on Student Mathematics Achievement, Attitudes toward Mathematics, Mathematics Self-Efficacy, and Metacognition" (Edna Leticia Hernandez Garduno); "A Gender Study of Students with High Mathematics Ability: Personological, Educational, and Parental Influences on the Intent To Pursue Quantitative Fields of Study in College" (Mary Katherine Gavin); "Characteristics and Perceptions of Perfectionism in Gifted Adolescents in a Rural School Environment" (Patricia Ann Schuler); "Gifted, but Gone: High Ability, Mexican-American, Female Dropouts" (Nancy Lashaway-Bokina). (Individual papers contain references.) (DB)

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1997 SPRING NEWSLETTER

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The National Research Center on the Gifted and Talented
1997 Spring Newsletter
NRC/GT

NRC/GT: Research Should Inform Practice

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When we first started The National Research Center on the Gifted and Talented (NRC/GT) seven years ago, we hoped our research results would go beyond the library shelves of other researchers. We wanted our studies and commissioned papers to influence policies and procedures in the field and to reflect the priorities of the Jacob K. Javits Gifted and Talented Students Education Act. Programming issues became center stage for much of our work. Now, as we travel to conferences and read various publications, we note discussions about the NRC/GT findings. Sometimes presenters are not aware of our research teams' affiliations, and they ask if we have heard about a specific finding. Yes--indeed--we know about the finding. We realize that our research has definitely not stayed on the shelf. We also take notice of where and how our work is cited. We see references to our work in many journals, newsletters, newspapers, and videotapes. This life beyond the library shelf is possible because of various product formats: videotapes, monographs, practitioners' guides, and the world wide web site. We are proud of our accomplishments and continue to create products for various audiences that are responsive to the mission of the NRC/GT.

Periodically, we review our list of disseminated products to see which topics are most popular. The most popular topics with the general public are reflective of our original research needs assessment survey completed in 1991. The research topics of interest to people around the country were summarized and ranked, and then we designed studies accordingly. Luckily, we have a cadre of researchers associated with the NRC/GT to help us with our research agenda. Practitioners and parents expressed interest in program impact and curricular modifications. Delcourt, Loyd, Cornell, and Goldberg (1994) examined the effectiveness of various service delivery models on students' cognitive and affective outcomes and concluded:

- Gifted children in Pull-Out, Separate Class, and Special School programs showed higher achievement than gifted students who were not in programs and, in most cases, than those from Within-Class programs and nongifted students.
- Although a limited amount of time was spent in the resource room (approximately 2 hours/week), the emphasis on academics with the Pull-Out model appears to have contributed to the achievement of these students.
- Students from the Separate Class programs scored at the highest levels of achievement and at the lowest levels of perception of academic competence, preference for challenging tasks, sense of acceptance by peers, internal orientation, and attitudes toward learning.

Recognizing that some special programs and services for high ability students are often not full-time solutions, practitioners and parents also wanted research data on curriculum modifications in the classroom. What are some appropriate informal and formal techniques to assess the students' mastery of content? Reis et al. (1993) examined one approach to modifying the curriculum known as curriculum compacting. Teachers of students in grades 2-6 were trained to use compacting and realized that several students had already mastered grade level concepts. The curriculum compacting study documented the following:

- Approximately 40-50% of traditional classroom material could be eliminated for targeted students in one or more of the following content areas: mathematics, language arts, science, and social studies.
- The most frequently compacted subject was mathematics, followed by language arts. Science and social studies were compacted when students demonstrated very high ability in those areas.

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- While approximately 95% of teachers used enrichment as a replacement strategy, 18% of teachers also used acceleration. (p. 39)

Teachers and parents are asking more and more questions about curricular modifications, as evidenced by our e-mail and letters. Several people have already read our studies on classroom practices (Archambault et al., 1993; Westberg, Archambault, Dobyns, & Salvin, 1993) and acknowledge that few modifications were made for high ability students in regular classrooms. They can even quote statements that appear in several textbooks and journals in our field:

- The target gifted students [in grades 3 or 4 classrooms] spent the majority of their time in reading, language arts, mathematics, social studies, and science engaged in whole-class instructional activities; and whether these students worked with the entire class or in groups, students were heterogeneously grouped across all subjects for 79% of the time. (Westberg, Archambault, Dobyns, & Salvin, 1993, p. 41)
- . . . [T]arget gifted students spent the majority of their time doing written assignments and participating in review/recitation activities. In addition to spending a large portion of time in passive activities, 84% of the activities across all five subject areas in which target gifted students were involved contained no form of curricular differentiation. (Westberg, Archambault, Dobyns, & Salvin, 1993, p. 41)
- In a national survey of teachers of grades 3 and 4, the majority "reported they had no training in gifted education" (Archambault et al., 1993, p. 42). Of the 2,300 respondents, 61% of the public school sample and 53% of the private school sample had no training in gifted education.

The link between research recommendations and publications provided the public with the information they wanted to know. Thus, the research monographs by Delcourt, Loyd, Cornell, and Goldberg (1994); Archambault et al. (1993); Reis et al. (1993); and Westberg, Archambault, Dobyns, and Salvin (1993) are very popular.

The results of a national survey of middle school administrators mirror some of the results we gleaned from a focus on elementary classrooms:

- There is much room for greater awareness of the needs of academically diverse populations in the middle school and the specific instructional skills required to meet these needs.
- Classroom standardization and a "one-size fits all" environment predominates over classroom flexibility as the norm in today's middle schools.
- Educators' beliefs about differentiating the curriculum through instructional strategies do not convert into practice. Therefore, instructional and structural strategies, which support curriculum differentiation, appear to be underused.
- Middle school practitioners who perceive the middle school learner as being in a plateau period tend not to create and deliver high level, engaging curricula, but rather to teach basic skills, low-level thinking, and less complex reading assignments. (Moon, Tomlinson, & Callahan, 1995)

These research monographs provide direct and indirect glimpses into elementary and middle school classrooms around the country. The researchers also conclude that more needs to be done to challenge our students. But just doing something different the next time around is not the answer; it is time to think about where we have been and where we want to go.

As practitioners reflect on their accomplishments during the school year, it is also a time to consider new or modified instructional and curricular techniques for the coming year. Local newspapers are filled with commentary concerning program changes. Some districts are revamping their curriculum, adopting block scheduling, or promoting the use of technology, while others are transforming their district by creating magnet schools. All these potential changes should be studied carefully; otherwise the same instructional and curricular techniques will be used under different nomenclature. One phrase that should become a refrain when we are considering new techniques is: What do we want students to know and be able to do? This phrase helps to focus our attention on dynamic learning. We should consult research studies, such as those listed above and others relevant to local issues, to ensure that purposeful change is made.

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In a taped interview with Guskey (Sparks, 1995), there is a great suggestion that extends the earlier question of what do we want students to know and be able to do? We should ask students: Tell me what you learned today. And, as educators, we should ask: Tell me what you learned this week in teaching. Taken together, these three statements essentially provide a framework for instruction, curriculum, and evaluation. They remind us that we need to know where we want to go, and we also need to check to see if we are getting there. Studying relevant research, seeking professional opportunities, and reflecting on progress and accomplishments will guide us in designing effective and challenging educational plans for all students.

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The National Research Center on the Gifted and Talented
1997 Spring Newsletter
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Building a Bridge: A Combined Effort Between Gifted and Bilingual Education

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In the past few decades, a major concern of researchers and educators in gifted education has been the significant underrepresentation of linguistically and/or culturally diverse (LCD) students in gifted and talented programs. The primary reason cited in the most recent studies conducted on this topic is the absence of adequate assessment procedures and programming for gifted minority students (Baldwin, 1987; Bernal, 1989; Castellano, 1995; Cohen, 1988; Frasier, Garcia, & Passow, 1995; Frasier & Passow, 1994; Kitano & Espinosa, 1995; Masten, 1985; Mills & Tissot, 1995; Rhodes, 1992; Smith, LeRose, & Clasen, 1991). The absence of knowledge or misunderstanding about the cultural, linguistic, and cognitive skills of LCD students results in limited educational policies, school programs, or other educational services that address the unique needs of these increasing populations.

According to the 1990 census, approximately 4.2 million youngsters aged 5 to 17 who speak a non-English language at home speak Spanish (Waggoner, 1995). The majority of members of the Hispanic/Latino group are Spanish/English bilingual and their native language is usually Spanish. The range of proficiency skills in the two languages can vary widely, from fluent bilingualism to limited communicative skills in either one of the two languages. Bilingual children may develop their two languages at different proficiency levels, at different developmental stages, and in different formal and informal settings.

In general, studies in bilingual education have supported the idea that bilingualism is a complex phenomenon involving personal and socio-cultural dimensions (Baker, 1993; Cummins, 1991; Pease-Alvarez & Hakuta, 1992; Snow, 1992). A parallel condition exists in education of gifted students; researchers in gifted education have also addressed the complexity of giftedness and the description of its factors (Grinder, 1985; Mönks & Mason, 1993; Renzulli, 1994; Sternberg & Davidson, 1986; Tannenbaum, 1983). Both bilingualism and talent development are multidimensional phenomena involving cognitive, affective, cultural, environmental, and situational factors.

The U.S. Department of Education report, *National Excellence: A Case for Developing America's Talent* (1993) states that "special efforts are required to overcome the barriers to achievement that many economically disadvantaged and minority students face" (p. 28). Various sections of this report clearly address the need to identify and nurture talents in youngsters of different socioeconomic and cultural backgrounds. It is clear from the extremely limited number of studies and educational practices which have focused on the dynamics of culture, bilingualism, and talent development in LCD students that insufficient information exists to describe the socio-emotional and cognitive characteristics of this target population (Frasier & Passow, 1994; Castellano, 1995; Cohen, 1988; Cummins & Swain, 1986; Kitano & Espinosa, 1995). Researchers in bilingual and gifted education have struggled with the assessment of these interrelated factors (culture, bilingualism, and talent development) for three major reasons: (1) variable definitions; (2) each factor has multiple components that provide different meanings; and (3) various methodologies have been used to study these factors separately and combined. Additionally, over the years, different philosophical, psychological, educational, and political perspectives have influenced the conception of the factors mentioned above.

For the past 30 years, in-depth studies have been conducted in the field of gifted education about definitions, identification systems, and development of youngsters who demonstrate talent or have the potential to demonstrate talent or high performance in one or more academic areas. An increasing body of knowledge is available in the field with respect to these issues. During the last few years, researchers in this field have increasingly turned their attention to the underrepresentation of some populations in

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programs for the gifted such as gifted females, gifted students with learning disabilities, gifted economically disadvantaged students, and gifted minority students. The last two groups have also been targeted by federal and state policies. For example, the Jacob K. Javits Gifted and Talented Students Act of 1988 established that "outstanding talents are present in children and youth from all cultural groups, across all economic strata, and in all areas of human endeavor" (U.S. Department of Education, 1993, p. 26). Moreover, one of the missions of The National Research Center on the Gifted and Talented (Renzulli, Reid, & Gubbins, 1990) is to place emphasis on "identifying the research needs of economically disadvantaged youth, individuals of limited English proficiency, individuals with handicaps, and other special populations that traditionally have been underserved in programs for gifted and talented students" (p. 1).

The evolution of the study of bilingualism has similarities with the field of gifted education, as researchers and practitioners in bilingual education have focused on defining bilingualism and developing theories and educational practices on the ability and use of more than one language (Baker, 1993; Cummins & Swain, 1986; MacLaughlin, 1984). As within the field of gifted education, social and political forces have influenced the provision of services for the specific needs of a portion of the society.

In the United States, bilingual and ESL (English as a Second Language) programs have been created primarily to respond to the needs of non-English or limited English speaking students who are continuously arriving in this country (Baker, 1993; Crawford, 1991; Keller & Van Hooft, 1982). In general, U.S. bilingual programs are transitional in nature, and the bilingual student or limited English proficient (LEP) student is moved as quickly as possible into the monolingual English instruction without maintaining the native language. As Baker (1993) points out, there is a clear difference between "a classroom where formal instruction is to foster bilingualism and a classroom where bilingual children are present, but bilingualism is not fostered in the curriculum" (p. 151). Essentially, bilingual and ESL programs differ in the type of instruction. In the first case, the curriculum is developed in two languages, and second language learning is built upon the student's first language. In the second case, ESL (English as a Second Language) instruction, students receive "pull-out" classes in the majority language for a few hours each week. The rest of the time the student is in the regular classroom, where the instruction is given in English. This is called submersion or "sink-or-swim language instruction" (Baker, 1993; Crawford, 1991; McLaughlin, 1984). However, in both types of programs the objective is mostly to shift the student from the home, minority first language to the dominant, majority second language (Baker, 1993; Bialystok & Hakuta, 1994; Crawford, 1991).

According to Bialystok and Hakuta (1994), learning a second language is a cognitive task in itself. Cohen (1988) points out that gifted limited English proficient or language-minority students are usually unable to express themselves well in English, and subsequently their talents are unknown because of their language limitations and not their lack of talents. One of the main reasons for this is that the assessment tools and procedures commonly used in gifted programs rely upon measures and techniques which are primarily dependent on English oral and written language (Hartley, 1987). Recent studies suggest that flexible criteria using multiple sources to assess talents in linguistically and culturally diverse students is needed in order to identify and nurture students' outstanding abilities (Castellano, 1995; Cohen, 1988; Kitano & Espinosa, 1995). Indeed, all children benefit when multidimensional assessment procedures are used to explore their interests, abilities, and learning styles.

The most recent studies in bilingualism are consistent with the hypothesis that the development of a second language can have positive effects on cognitive skills (Cummins & Swain, 1986; Hakuta, 1987; Hakuta & Gould, 1987). In this regard, Bialystok and Hakuta (1994) explain that "bilingual speakers have two linguistic systems for expressing their thoughts" (p. 10). Two cognitive mechanisms are particularly developed in bilingual children, the *switching* between their two languages, and *transferring* information from one language to the other.

Research in gifted education and in bilingual education has indicated that, in general, the education system has focused attention on the weaknesses rather than the cognitive strengths of linguistically and culturally diverse students (Barkan & Bernal, 1991; Davidson, 1992; Hakuta & Gould, 1987; Kolesinski & Leroux, 1992). Lack of information and misconceptions of learning and cognitive styles' preferences

among language minority students have also been mentioned (De Leon, 1983). Addressing the latter, Hartley (1987) argues that "many cultural groups value listening and learning and encourage considered thought before speaking. What appears to be slowness may only be what a student knows as correct behavior" (p. 6).

Each society or culture values and encourages the development of certain talents or "intelligences" (Gardner, 1993) in its youngsters, while simultaneously overlooking or dismissing others (De Leon, 1983; Tannenbaum, 1986). For example, from Brickman's (1988) point of view, gifted students with foreign languages or the "multilingual gifted" have been neglected and often excluded from gifted and talented programs in the United States. Linguistically and culturally diverse students come from cultures where special talents are valued but not recognized by the majority culture (Bermúdez, Rakow, Márquez, Sawyer, & Ryan, 1991; Cohen, 1988). On the other hand, with respect to culture and the development of language proficiency, Bialystok and Hakuta (1994) believe that "each learning situation, as well as the criteria for 'success' in that context, is created through the opportunities and constraints of language, brain, mind, self, and culture" (p. 206).

Very few educational models or programs have been specifically designed to identify and develop talents in linguistically and culturally diverse students. Furthermore, according to Bermúdez and Rakow (1993), there is an absence of specialized programs or instructional models focusing on gifted LEP students in gifted education. These programs can promote primary and second language development as well as cultural expression through the different academic areas. "Model Rocketry and the Space Sciences for the Gifted" (Cary, 1990) and Project EXCEL, developed in San Diego Unified School District (Hermanson & Perez, 1993) are two examples of such programs. Another program which addresses this goal is the Tucson Unified School District program, GATE, which integrates bilingual education and gifted education focusing the attention on limited English proficient (LEP) and other minority students (Barkan & Bernal, 1991).

Essentially, the transition from an old paradigm to a new one is a "reconstruction of the field from new fundamentals, a reconstruction that changes some of the field's most elementary theoretical generalizations as well as many of its paradigm methods and applications" (Kuhn, 1970, p. 85). The actual paradigms in gifted education and the studies conducted in the field seem to describe a reality in which opportunities for children of cultural and linguistic backgrounds other than the "majority group" are denied. Although this reality has been addressed and described by researchers and practitioners in the United States with respect to Hispanics and Native Americans, the underrepresentation of linguistically and culturally diverse children in gifted programs is a worldwide problem.

While some researchers in gifted education advocate new paradigms for identifying talent potential in culturally diverse populations (Frasier & Passow, 1994), researchers in bilingual education are trying to connect their field with programs for the gifted to meet the needs of LCD children (Barkan & Bernal, 1991).

Whether using the terms gifted LEP, LCD gifted, gifted ESL, or gifted bilingual, these official and theoretical terminologies are addressing the particular characteristics of a child who demonstrates talent potential or outstanding talents while simultaneously developing two languages. Language proficiency depends on the use and meaning of language in context (Bialystok & Hakuta, 1994), and in some ways, talent development also depends upon these two factors.

The identification and nurturing of talents in linguistically and culturally diverse children will benefit not only from new research about the personal, affective, and cognitive needs of this population, but also from the recognition that a constantly changing society celebrates and promotes the diverse expression of talents in its youngest generations.

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Talent Development for Everyone: A Review of *Developing the Gifts and Talents of All Students in the Regular Classroom*

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Many educators are beginning to realize that more needs to be done to challenge students in the regular classroom. The innovative ideas used to challenge high ability students are now being viewed as a means to provide rich curricular opportunities for all students.

Margaret Beecher is at the forefront of this movement. In the introduction to her book, *Developing the Gifts and Talents of All Students in the Regular Classroom: An Innovative Curricular Design Based on the Enrichment Triad Model,* Beecher provides a quote by Roland Barth that clarifies the primary mission she hopes to accomplish. Barth (1990) states, "Rarely do outside of school remedies work their way into the fabric of the school or into educators' lives, and more rarely into classrooms. Therefore, they offer only modest hope of influencing the basic culture of the schools" (p. 3). The ideas, strategies, and suggestions presented by Beecher begin in and focus on the regular classroom and provide guidance for how best to provide for the unique talents and abilities of all students. Beecher's objective is to improve schools from within by utilizing the best of what gifted education has to offer and making it available to each and every individual in the classroom.

To accomplish this task, Beecher relies heavily on the Enrichment Triad Model (1977), developed by Dr. Joseph Renzulli. For those not familiar with this model, it consists of three basic types of activities. Type I activities involve exploratory experiences that allow students to examine topics and ideas not ordinarily focused on as part of the regular curriculum. They are designed to pique student interest for the topic under investigation. A variety of mediums are often utilized, including guest speakers, interest centers, and computer software. Type II activities focus on providing students with the processes and skills necessary for higher level thinking. They are organized into four primary categories which include: 1) creative and critical thinking skills, 2) learning how-to-learn skills, 3) reference skills, and 4) communication skills. Included under these general headings are a multitude of more specific skills and tasks. It is important to note that Type II training is often a prerequisite that enables students to successfully complete Type III projects. Finally, Type III projects are the culminating and most important aspect of the Enrichment Triad Model. They focus on students assuming the roles of "practicing professionals" in a given area of study. Participants focus on real-life problems of interest to them, and by adopting the techniques and skills of an expert in that field, they eventually find a solution to their problem. This solution is then presented in a unique and creative way. For example, one Type III project described in the book focused on skiing. The student developed a videotape on the slopes of the Berkshires to provide an introduction to the basics of skiing techniques. The Enrichment Triad Model was initially intended for use with students identified as gifted. Beecher's primary concern in her book is to translate this model into an effective program for regular classroom teachers and for all students.

In order for this transition to be effective, Beecher provides a 12-step organizational framework to help educators develop units that will incorporate the enrichment activities of the Triad Model. While the author spends significant time elaborating on each step, for this review I will briefly summarize some of the important aspects of the process in general. Because emphasis is placed on the regular classroom, and because the time constraints often placed on teachers in such a situation need to be considered, the general themes and/or topics to be explored are often selected by the teacher and relate to some aspect of the prescribed curriculum. This is not to say that students are never allowed to select the general interest area, but the topics are usually curriculum related.

The first several steps in the process involve the teacher in preparatory activities that form the basis of

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the development of a unit of study. Before a unit, theme, or topic is examined the teacher must first select a broad theme that covers all or part of a particular year's curriculum. In a fourth grade class, for example, the overarching theme that was selected for the year was "Survival." The more specific units developed over the course of the year were subsumed under this general theme. In addition to this thematic selection, the teacher is also involved in mapping the curriculum for the school year. This involves detailing the specific skills and processes to be taught in each content area. These skills are then integrated into the specific units and the general theme described above. The skills involve those found in the regular curriculum, such as analyzing cause and effect relationships, comparing and contrasting, and interpreting the main idea of a text. Once these two tasks have been completed, the topics or sub-themes are then developed, with the teacher always mindful of relating these sub-themes to the general theme and the necessary skills to be taught. The particular topic Beecher spends a significant amount of time describing is her Native Americans unit. In developing this unit she continued to monitor how the study of Native Americans would be effectively integrated with the all-inclusive theme of Survival.

The specific units or themes are then infused with the activities detailed in the Enrichment Triad Model. Brainstorming sessions begin the initial planning. The first session involves listing any and all ideas related to the unit. Resources such as textbooks, magazines, and the teacher's prior knowledge and expertise all play a role in this generative process. The thoughts developed in this brainstorming session are then translated into a web that helps to graphically organize these initial ideas. The second brainstorming session is an attempt to develop activities that will help students learn about the important topics detailed on the web. At this time the activities are considered in terms of how they relate to specific content areas and the required skills to be covered. It is recommended that the teacher confer with specialists in the school so that activities can be provided that focus on a broad range of topics and highlight a variety of student strengths and abilities. Beecher points out that integration of different subject areas is crucial to the development of such a unit, and that the teacher must make a concerted effort to highlight the interconnectedness of the individual content areas.

Also involved in the preliminary planning are such issues as determining student outcomes and surveying students as to their background knowledge and interests. In terms of outcomes, Beecher stresses the obvious emphasis on content to be mastered and skills to be acquired, but also focuses on student attitudes that will be developed by the end of the unit. Such attitudes that she deems important include an inquisitive nature and independent work habits. As far as surveying the students is concerned, Beecher is not only intent on gathering information related to what students already know about a given topic and what interests them about that topic, but also how they would like to approach their learning. By suggesting a variety of learning styles and finding out what styles pique the students' enthusiasm, more effective lessons and activities can be generated.

Once the students become involved in the Type I, II, and III activities a relatively sequential format is followed. For Type I activities, Beecher relies heavily on the use of interest centers and guest speakers. The interest centers and guest speakers focus on developing not only student interest in the unit, but attempt to provide a foundation of background knowledge that the students will need for more in-depth Type III activities later on. Beecher points out that the use of interest centers is of utmost importance in the primary grades. Younger students need hands-on materials they can interact with and learn from.

Type II process training lessons are infused throughout the course of the unit. The goal of such lessons and activities is to allow students to "process and interact with the content presented." This type of training is often needed in order for students to appreciate fully the Type I experiences, and provides the requisite skills necessary for in-depth Type III investigations. While specific Type II training activities will be necessitated by the specific independent projects the students are involved in, Beecher believes there are several Type II skills that are "a must" as students progress through the Triad process. These include:

- Brainstorming
- Webbing
- Decision Making
- Questioning

- Creative Problem Solving
- Planning

The culminating Type III training activities described by Beecher differ slightly from the Type III investigations ideally developed according to the Enrichment Triad Model. First and foremost, the Type III training activities involve each and every student in the classroom. They are not geared toward only those students who exhibit particular talents and abilities. As Beecher points out, this may mean that not all of the independent projects students work on will be as in-depth as a real Type III. This is not to say that those students who do exhibit talents and abilities will not be given the opportunity to reach their potential. The Type III training activities that begin in the classroom are often developed into expanded Type III projects with the help of the enrichment specialist. The second key difference related to these activities is that they are based on the unit or theme under investigation. For example, with the Native Americans unit, students were allowed to select projects within the parameters of the topic being studied. They were not allowed to select any interest area, which is often a hallmark of Type III investigations.

To highlight the difference between a Type III training activity and an in-depth Type III investigation, Beecher provides several examples of each. One student, as a result of investigating the Native American culture, decided to become a "tribal storyteller." As part of her Type III training activity she learned the essential techniques of being a good storyteller and conducted extensive research on the myths and legends of the Plains Indian tribes. To display her knowledge and expertise, she presented a variety of myths and legends to parents during a culminating "powwow."

Going one step further, another student decided to explore her family's genealogy in detail. As part of her Type III project "this student wrote, directed, and produced a play entitled '*A Living Genealogy*,' which was videotaped for a local cable company and became a national award-winning video" (p. 100). This investigation involved the assistance of not only the teacher, but the enrichment specialist and parents as well.

It cannot be emphasized enough that as the Type III training activities begin, students and teacher need to take the time to plan their investigations carefully and focus on a clear and specific problem. As Beecher states, "Planning is a critical component of a Type III investigation and offers a challenging task for both teachers and students. Without a clear plan most endeavors are doomed to failure" (p. 88). To fulfill this objective, Beecher provides a detailed management plan for students to follow.

Once the Triad process has been completed for a topic or theme, assessment and evaluation take place. This assessment and evaluation not only center on the students, but on the teacher as well. In terms of the students, emphasis is placed on their "constructed responses," i.e., the products developed as a result of their independent investigations. Peer and self-assessment are of utmost importance as is feedback from the teacher on how to improve future investigations. The teacher also needs to examine his or her own teaching and be mindful of the modifications that can be made to improve future Triad experiences.

Finally, Beecher provides a section for the reader that deals with frequently asked questions related to the implementation of the Triad Model in the regular classroom. These questions address topics such as how to handle the awe-inspiring task of guiding 20 or more students through Type III investigations simultaneously, and dealing with the fact that you cannot be an expert on every specific topic that the students choose to explore. I found this question and answer section particularly helpful, because it provided answers to some of the key questions that may have otherwise prevented me from experimenting with the Triad Model in the future.

Overall, I found the book to be very "hands-on" and teacher friendly. For almost every step in the overall process of integrating Triad in the classroom, a useful chart or diagram is provided that enables the teacher new to the process to begin immediately. Also very helpful is the Appendix offered at the end of the book. It includes detailed descriptions of 21 lessons used to teach a variety of Type II training skills. These include decision making, creative problem solving, SCAMPER, and webbing. Also, the examples provided of successfully completed projects have inspired me to integrate these advanced investigations into my own curriculum. It was nice to see that enrichment learning and teaching do not have to be

reserved for a select few students. Such an approach is available to all students with the help of a dedicated educator such as Margaret Beecher.

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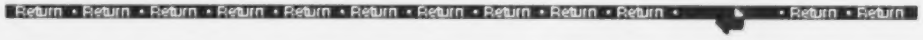

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Recent Research

The Effectiveness of Peer Coaching on Classroom Teachers' Use of Differentiation for Gifted Middle School Students

Caroline Sarah Cohen
University of Connecticut, 1997

Despite the obvious importance of educating all children to their fullest potential, gifted students remain underserved and unchallenged in many educational settings. Gifted students spend much, if not all, of their time in the regular classroom, yet classroom teachers have usually received little or no preservice or inservice training in gifted education. The implications are obvious: teachers who serve gifted students must receive appropriate training in techniques to meet the needs of these children, particularly in strategies and resources for differentiating the regular curriculum and instruction. Peer coaching has emerged in the research literature as one effective professional development technique which encourages and enables teachers to practice and implement newly learned strategies.

The purpose of this study was to examine whether peer coaching was perceived by participating middle school teachers as a useful professional development technique for the acquisition of curricular and instructional differentiation strategies for high ability and high achieving students in the regular classroom. Qualitative and quantitative methodologies were used to describe participating teachers' perceptions of the training and supported practice of peer coaching. Key participants in this study were middle school classroom teachers; additional participants were district administrators, peer coaches, students, and parents.

Findings from this study supported the use of the principles of peer coaching for the development of new strategies. Participating teachers reported positive perceptions of peer coaching and its usefulness in the acquisition and implementation of differentiation strategies. Quantitative data indicated conflicting perceptions among teachers, students, and parents about the amount of challenge and differentiation initially provided to high ability middle school students. Qualitative data yielded three emergent themes: 1) the variety and contradiction of teachers', students', and parents' perceptions throughout the study; 2) the initial absence of a common definition and shared understandings of differentiation among participants; and 3) the nature of change and the time and training needed for the strategies of differentiation to be widely implemented by classroom teachers.

Effects of Teaching Problem Solving Through Cooperative Learning Methods on Student Mathematics Achievement, Attitudes Toward Mathematics, Mathematics Self-Efficacy, and Metacognition

Edna Leticia Hernández Garduño
University of Connecticut, 1997

Recently, an emphasis has been placed on teaching mathematics in cooperative learning settings and through a problem solving approach (NCTM, 1989). Although numerous research studies have been conducted on the effects of cooperative learning on mathematics achievement, attitudes, and self-efficacy, no study was found that addresses the use of cooperative learning while teaching mathematical problem solving and heuristic strategies and its effect on metacognition. The purpose of this study was to assess seventh and eighth grade male and female students' metacognition, self-efficacy, attitudes toward mathematics, and achievement after participating in a two-week course on problem solving. Problem solving is an important area of inquiry, as previous research indicates that females demonstrate lower performance in solving non-routine problems.

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This experimental study used a pretest-posttest control-group design in which students were randomly assigned to one of two experimental groups or a control group during a summer enrichment program offered to talented students in a southern state. All three groups received instruction in probability and statistics through a mathematical problem solving approach using heuristic strategies. The two experimental groups were taught through cooperative learning methods. In the first experimental group, students worked in mixed-gender groups and, in the second one, in single-gender groups. The control group was taught using whole-group instruction in which competition and individual work were stressed. Students' achievement in probability and statistics, self-efficacy, and attitudes toward mathematics were assessed at the beginning and end of instruction. Data from the assessment of these three variables were analyzed using a multivariate analysis of covariance and a follow-up discriminant function analysis. Students' metacognitive episodes were assessed using content analysis procedures.

Although the literature suggests that cooperative learning settings, particularly single-gender groups, are more beneficial for females, no statistical differences in achievement or self-efficacy were found among the groups. Statistically significant differences in attitudes toward mathematics were found favoring students in the whole group instruction, competitive setting. Also, the highest achieving male and female students exhibited more metacognitive episodes in the competitive setting than students in the other groups. Lower achieving male and female students, however, exhibited fewer metacognitive episodes in this type of setting.

A Gender Study of Students With High Mathematics Ability: Personological, Educational, and Parental Influences on the Intent to Pursue Quantitative Fields of Study in College

Mary Katherine Gavin
University of Connecticut, 1997

It is well documented that more males than females enter and pursue mathematically related career fields. Research has generally examined gender issues concerning mathematics majors and related career goals as an integral part of majors and careers in the sciences. However, an examination of the distribution of women in these fields presents a picture of uneven advancement. Women are clustered in the life sciences with far fewer in physical sciences, mathematics, engineering, and computer science. Using data from the National Education Longitudinal Study of 1988 (NELS:88), this study examined personological and educational characteristics of females and males identified as having high ability in mathematics. These data consist of a sample of 24,599 students from 1,052 schools throughout the nation who completed surveys in eighth, tenth, and twelfth grades. Gender similarities and differences were explored using descriptive and inferential statistics.

Findings from this study revealed no gender differences with respect to performance or participation in mathematics courses. Males scored significantly higher on the verbal section of the SAT test, while no gender differences were found on the mathematics section. Also, males rated usefulness of mathematics significantly higher than females. In addition, significant differences were found between parental levels of education and expectation. The more educated the parent, the greater the expectations were for the child's educational goals. Logistic regression analyses were performed to predict the gender of students who intend to pursue a quantitative field. The odds ratios indicated that SAT verbal scores and teacher emphasis on further study in mathematics were significant influences on males, while credits in Calculus and SAT mathematics scores were significant influences on females. Analyses also revealed that high mathematics ability females who intend to pursue a quantitative field were more likely to consider mathematics as useful to their future and had more credits in Calculus than high mathematics ability females who do not intend to pursue a quantitative field.

Characteristics and Perceptions of Perfectionism in Gifted Adolescents in a Rural School Environment

Patricia Ann Schuler
University of Connecticut, 1997

This qualitative study investigated the characteristics of perfectionistic gifted male and female adolescents in a rural middle school, how they perceived their perfectionism, the influences on their perfectionism, and the consequences of their perfectionistic behaviors in the context of their perceived gender roles and their rural middle school experiences.

Qualitative and quantitative methods of data collection were employed to gather data from 20 gifted male and female adolescents who were identified as having perfectionistic tendencies. Semi-structured interviews, record and document review, self-report teacher survey, and participant observation were used to identify factors which may influence the perceptions and behaviors of this population.

Findings from this study confirm the theoretical proposition that perfectionism is a characteristic of many gifted adolescents. In this study, 87.5% of gifted adolescents in accelerated courses in a rural middle school were identified as having perfectionistic tendencies. Results support the multidimensional theory of perfectionism which states that perfectionism exists on a continuum from healthy to dysfunctional behaviors (Hamachek, 1978). Several differences exist between the healthy perfectionists and the dysfunctional perfectionists. Healthy perfectionists possessed an intense need for order and organization; displayed self-acceptance of mistakes; enjoyed high parental expectations; demonstrated positive ways of coping with their perfectionistic tendencies; had role models who emphasize doing one's "best"; and viewed personal effort as an important part of their perfectionism. The dysfunctional perfectionists lived in a state of anxiety about making errors; had extremely high standards; perceived excessive expectations and negative criticisms from others; questioned their own judgments; lacked effective coping strategies; and exhibited a constant need for approval.

Family, teacher, and peer influences on perfectionism were perceived as mostly positive for the healthy perfectionists, but negative for the dysfunctional perfectionists. The impact of gender roles was not found as an influence. The perceived lack of challenge by a majority of the perfectionists was manifested in their enormous efforts to perfect school work, while exerting minimal intellectual effort and receiving high grades in return. Teacher difficulty in identifying mild perfectionistic distress may be due to the perception of perfectionistic gifted adolescents as being "model students" who have good school adjustment.

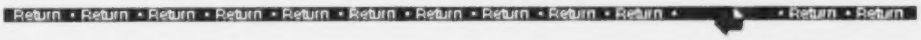
Gifted, But Gone: High Ability, Mexican-American, Female Dropouts
Nancy Lashaway-Bokina
University of Connecticut, 1996

The problem of students leaving school prior to high school graduation is particularly intense in south Texas. Approximately 25,000 Mexican-American students left school before graduation during the 1990-91 school year in Texas. This study examined one portion of the dropout population: high-ability Mexican-American females. Traditional identification measures were used to identify high-ability females who left school between 1990-93, and prior to their graduation from high school. These identification methods included the review of: cumulative records for grades, standardized achievement and creativity test scores, reports of awards or outstanding honors, and counselor, teacher, and self recommendations. Information was obtained from records of school districts with enrollments near or over 12,000 students. According to the Texas Education Agency (1992), the larger the student body, the greater the chance of students dropping out. The school systems included in this study are among the largest in Texas.

Non-traditional methods used by Mexican-Americans to identify high-ability students within their culture were investigated through qualitative research methodology as described by Lincoln and Guba (1985) and Strauss and Corbin (1991). Interviews were conducted with community members, educational personnel, family and extended family, and peers to identify high-ability dropouts who exhibited creativity or exceptional talent in the arts, leadership, or cultural activities.

The four major purposes of the study were: to describe the circumstances that influenced high-ability

students to leave school prior to graduation, to determine if underlying characteristics of Mexican-American, female students exist that signify gifted or exceptional behavior in the Mexican-American culture, to examine the identification and gifted program guidelines for students' entry into gifted and talented programs in south Texas, and to compare the relationship between the lower Valley school population and the number of Mexican-Americans represented in gifted and talented programs.



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Gender Differences in High School Students' Attitudes Toward Mathematics in Traditional Versus Cooperative Groups

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Recent research indicates that the gap between male and female students' mathematics achievement is gradually beginning to diminish (Gutbezahl, 1995); however, female students are still underrepresented in advanced mathematics classes as well as in careers involving mathematics (Kerr, 1994; Stage & Maple, 1996). Bright, young women continue to lock themselves out of mathematically related professions. In the study reported briefly here, a survey was administered to high school students to better understand how students' attitudes toward mathematics differ by gender and by the grouping techniques used for mathematics instruction. More specifically, the survey examined the impact of cooperative grouping as an alternative to traditional mathematics instruction for improving females' attitudes toward mathematics. It is important to note that *cooperative grouping* procedures--not a particular theoretical model of *cooperative learning*--were investigated.

Background

When females enter high school, they take fewer and less advanced mathematics courses, self-selecting out of higher level mathematics classes. Because males enroll in more mathematics classes, they dominate professions that require higher level mathematical knowledge (Hanson, 1992). This is of particular concern to educators interested in the development of mathematical talent in capable young women. Several external and internal barriers have been cited in the literature for females' limited pursuit of mathematics. For example, some parents' and teachers' beliefs about the relative unimportance of mathematics for females and expectations for females' lower mathematical achievement have an impact on females' interest in pursuing mathematics coursework (Dickens & Cornell, 1993; Hanson, 1992). In addition, female students report less confidence in their mathematical abilities than their male counterparts (Cohen & Kosler, 1991; Hanson, 1992), and males and females differ in their attributions for success and failure in mathematics (Leder, 1984; Subotnik, 1988).

Several interventions and programs have been proposed for improving female students' attitudes toward mathematics, including the use of cooperative grouping procedures in mathematics classes (AAUW, 1992; Mulryan, 1992). The impact of this strategy has been examined at the elementary level, but only a few studies have investigated the effects of this strategy with high school students. Nichols and Miller (1994) examined the attitudes and achievement of algebra II students who received instruction in cooperative groups for 18 weeks, followed by instruction in a traditional manner for 18 weeks. While the researchers found that the students' attitudes were more positive and their achievement was higher when enrolled in classes that used cooperative grouping, the use of multiple treatments with the same subjects threatens the findings of their study. Additional investigations have been needed to address the impact of grouping procedures on students' attitudes toward mathematics at the high school level.

Research Design

In this study, survey research was used to collect data about high school students' attitudes toward mathematics. A 37 item survey was developed (Drzewiecki, 1996) to address several factors cited in the literature that reportedly affect students' attitudes toward mathematics. The survey contains 15 open-ended items and 22 items to which students respond on a 5-point scale. For example, "I like being able to work independently on a math problem" was followed by five responses, ranging from strongly disagree to strongly agree. The 22 items correspond to six categories: general attitudes, usefulness,

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confidence, parental influences, participation, and attitudes toward group work. The survey was administered to students who were participating in traditionally grouped classes and students who were in cooperatively grouped classes.

Sample

The sample consisted of 218 (107 males, 111 females) students enrolled in the mathematics classes taught by four teachers in a suburban high school in the Northeast. The students were enrolled in algebra II, geometry, or pre-calculus classes, with the majority enrolled in algebra II classes. Two teachers instructed their mathematics classes in a traditional manner by having students solve mathematical problems independently. The other two teachers used a cooperative grouping procedure in which students worked in groups of two to four students to complete assignments. Again, it should be noted that *cooperative grouping*--not a specific theoretical model of *cooperative learning*--was used by two of the teachers. A chi square analysis indicated that there were no significant differences in the previous academic grades of the two groups of students, $x^2 = 3.72$ (4), $p > .05$; therefore, students in the traditionally grouped classes and the cooperatively grouped classes were assumed to be equivalent in ability. The survey was administered to the students in the middle of the academic year when the students had been enrolled in their respective mathematics classes for several months.

Summary of Results

The survey findings are presented below. All descriptive and inferential analyses were conducted using the StatView (1992) software program.

Attitudes Toward Mathematics by Gender and Instructional Method

The first research question addressed the general attitudes toward mathematics of students who were receiving mathematics instruction in traditional versus cooperative groups. A 2 x 2 analysis of variance indicated that there were no significant main effects for gender and instructional method ($p > .05$); however, there was a significant interaction between gender and instructional method with regard to students' general attitudes toward mathematics, $F(1, 203) = 4.902$, $p < .05$. Female students in the mathematics classes with traditional instruction had more positive general attitudes toward mathematics than the females in the cooperatively grouped classes, and the males in the cooperatively grouped classes had higher attitudes than the males in the traditionally grouped classes.

In addition to students' general attitudes, the relationship between gender and instructional method (traditional versus cooperative grouping) with regard to students' confidence in their mathematical abilities was investigated. A 2 x 2 analysis of variance revealed no main effect for instructional method ($p > .05$), a significant effect for gender, $F(1, 214) = 4.84$, $p < .05$, and a significant interaction between gender and instructional method with regard to students' reports of confidence in their mathematical abilities, $F(1, 209) = 5.45$, $p < .05$. Females in the cooperatively grouped classes reported less confidence in their mathematical ability than the females in the traditionally grouped classes, while the reverse of this was found for males.

Another category on the survey was students' attitudes toward working in groups. A significant difference was found between the traditionally grouped and cooperatively grouped mathematics classes, $F(1, 210) = 58.52$, $p < .05$, and a significant interaction was found between gender and instructional group with regard to attitudes toward working in groups, $F(1, 210) = 5.55$, $p < .05$. Males in the cooperatively grouped classes had the most positive attitudes toward working in groups, and females in the traditional classes had the least positive attitudes toward working in groups. No differences in gender and instructional method ($p > .05$) were found on the other categories represented on the instrument (participation in mathematics classes, attitudes toward usefulness of mathematics, and perceptions about parental influence).

Attitudes Toward Mathematics by Gender and Previous Grades

A few analyses were conducted in which the instructional method was disregarded. The relationship between gender and students' previous academic grades in mathematics classes with regard to students' general attitudes toward mathematics was analyzed. A 2 x 2 analysis of variance revealed a significant

interaction between gender and previous grades with regard to students' general attitudes toward mathematics, $F(4, 197) = 2.691$, $p < .05$. Specifically, male students had more positive general attitudes toward mathematics than females at each grade point average with the exception of those who reported a B average in previous mathematics courses. Of the students with a B average, females had more positive general attitudes toward mathematics.

Attributions for Success in Mathematics by Gender and Instructional Method

Do female and male high school students' attributions for success in mathematics differ by gender and in traditional versus cooperatively grouped classes? Students selected responses on the survey to indicate why they are successful in mathematics. Their responses corresponded to the following attributions: effort, luck, task difficulty, or ability. A chi square analysis revealed significant differences between male and female students' attributions for success in mathematics, $x^2 = 10.5$ (3), $p < .05$, when grouping was not considered; namely, 49% of the males attribute success to ability and 45% of the females attribute success to effort. In addition, there were no significant differences in the attributions for success by males who were enrolled in traditional versus cooperatively grouped mathematics classes, $x^2 = 2.302$ (3), $p > .05$. However, significant differences were found in the attributions for success by females in the traditional versus cooperative grouping classes, $x^2 = 7.84$ (3), $p < .05$. More female students attributed their success to ability when they were enrolled in traditional, not cooperatively grouped, mathematics classes. Specifically, 19% of the females in cooperatively grouped mathematics classes attributed their success to ability, but 41% of the females in traditional mathematics classes attributed their success to ability.

Conclusions

The results from this survey were interesting, and some of the findings were quite surprising. The results suggest that cooperative grouping may not be as advantageous for females as is traditional instruction for promoting positive, general attitudes toward mathematics. In addition, the results indicate that cooperative grouping in high school mathematics classes may not be a better method for helping females gain greater confidence in their mathematical abilities. The gender differences in attributions for success in mathematics and students' attributions for success in traditional versus cooperative groups are particularly intriguing. These findings suggest that participation in group learning for the majority of the class time in mathematics classes may actually undermine female students' motivation! Because the study was limited to a sample of students located in just one large high school, it would be inappropriate to generalize the results to other settings and populations. Nevertheless, if teachers have been using group learning as a strategy for improving female students' attitudes toward mathematics, perhaps they need to re-examine their use of this strategy and, at the very least, survey their own students about their preferences for instructional grouping procedures.

On the open-ended items on the survey, the students enrolled in the classes using cooperative grouping procedures indicated that, in general, they enjoyed working in cooperative groups because they were able to provide help and receive help from their peers, share ideas on solving mathematics problems, check answers with other students and, ultimately, understand the material more easily. A future examination of the students who give and receive help within the cooperative groups (for example, the number of students and the abilities of the students), and if any gender differences are related to this, may offer some explanation as to why females report less confidence in their mathematics abilities and lower general attitudes toward mathematics when participating in classes that use cooperative grouping for instruction. Clearly, additional investigations are needed to address issues related to the findings in this study.

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The National Research Center on the Gifted and Talented
1997 Winter Newsletter

NRC/GT: The Parent Connection

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For the past seven years The National Research Center on the Gifted and Talented (NRC/GT) has conducted theory-driven, practitioner-oriented research focusing on identification and programming for high ability students. Our mission guides us in designing studies that ultimately affect future policies and procedures in gifted and talented education. As resulting data become available, practitioners incorporate findings to ensure appropriate and challenging programs and services for students. They access our data in print, videotape, and electronic formats and make decisions about how to improve or extend practices.

In all phases of our research, practitioners play a central role. They serve as research liaisons in schools throughout the country, evaluate potential instruments and assessment tools, review drafts of monographs, and share our information with others. They often operate under the "Did you know?" approach to professional development. At meetings, conferences, workshops, or in corridors, practitioners spread the word about the NRC/GT. We appreciate all of these "town criers of NRC/GT research" because we want our findings to reach people who can make positive changes in schools.

Another role for practitioners evolved over time--sharing research findings with parents. We incorporated specific information for parents in monographs. For example, in *Reading With Young Children* (Jackson & Roller, 1993), a letter to practitioners invites them to share information with parents. In each self-contained section of the report, the authors respond to frequently asked questions about precocious readers, assessment strategies, and writing skills. Questions are posed, responses are provided to inform and guide practitioners and parents, and references and resources are added to support the statements. One frequently asked question is:

> **Will precocious readers continue to be exceptionally good readers?**
>
> Precocious readers almost always remain at least average in their reading ability and most stay well above average, even though their reading performance in fifth or sixth grade is much more likely to be within the range of their classmates' performance than it was in kindergarten. . . . Some investigators have claimed that precocious readers remain superior in reading achievement throughout their elementary school years, relative to other children of comparable intelligence who were not early readers. . . . However, the meaning of these findings is hard to evaluate. Does an early start in reading in itself give a child a lasting advantage, or do other factors, such as persistence, interest in learning, or parental support, contribute both to the early emergence of reading and to continued good achievement? (p. 37)

Other documents focus on dual audiences--educators and parents. Practitioners' Guides on *What Educators and Parents Need to Know About Elementary School Programs in Gifted Education* and *What Educators and Parents Need to Know About Fostering Creativity* present specific information and research facts that can be reviewed in minutes. Complex quantitative and qualitative research findings are distilled into essential research facts:

> **What Educators and Parents Need to Know About Elementary School Programs in Gifted Education**
>
> Children in programs for the gifted obtain higher achievement scores than their gifted peers who are not in such programs.

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> Successful programs challenge students through high level content and pacing of the curriculum, while providing many opportunities for these students to make their own choices and to have control over their learning environment. (Delcourt, 1995)

Other times research-based information illustrates how to foster the talents of all children:

> **What Educators and Parents Need to Know About Fostering Creativity**
>
> Provide environments that stimulate and encourage creative ideas. Reward a broad range of creative behaviors.
>
> Be a mentor to a child who displays interest in your particular domain or field of expertise.
>
> Teach students creativity enhancement techniques (e.g., SCAMPER [acronym for **S**ubstitute, **C**hange, **A**dapt or **A**dopt, **M**agnify or **M**inify, **P**ut to other uses, **E**laborate, and **R**earrange], brainstorming, synectics, attribute listing) to use with their science fair projects, art activities, and writing assignments to design a more creative product.
>
> Expose your child to various types of tasks and activities, emphasizing variety in music, family and/or field trips, TV viewing, reading material, hobbies, toys, etc. (Plucker, 1995)

Still other times, research-based documents serve as guides for parents of young children. In *Parenting the Very Young, Gifted Child,* Robinson (1993) discusses perfectionism.

> Young gifted children have frequently been described in individual case studies as perfectionistic, that is, self-critical, setting high standards for their own performance, and monitoring their attainment according to what others think. . . . What is good and necessary for ultimate high achievement--setting high but attainable goals for oneself--can be either a positive or negative force. A delight in mastering challenging tasks may well be the secret of success, and this quality in the very young is predictive of later high ability. . . . (p. 6)

Alvino (1995) fills a book with ideas: *Considerations and Strategies for Parenting the Gifted Child.* Topics include: Parenting Styles Make a Difference; The Enriched Environment; Nurturing Your Child's Creativity; Critical Thinking, Research, and Study Skills; Academics at Home: The Core Subjects; The Value of Play. To enhance the joy and challenge of parenting a gifted child, Alvino advises:

> Remember to temper overbearing personality traits. Focus on the positive aspects of your child's behavior; don't place unfair burdens on your child just because he or she is gifted; allow for unstructured time and self-initiated play; and balance permissiveness with authority as a loving, caring adult.
>
> Balance "being on task" activities with relaxation and lots of free time. Let your child's interests guide your involvement. Give appropriate praise that is specific, focuses on the desired behavior (not the child), and celebrates accomplishments for their own sake. Be a guide and matchmaker between your child's interests, talents, and the means and opportunities to explore them. (pp. 77-78)

From providing data on traits and behaviors of gifted children to developing guides for parents, our documents feature critical information to help children. Of course, parents are their children's first teachers and they exert a strong influence on their aspirations and future roles. Hine (1994; 1995) summarizes her research findings in English and Spanish: *Helping Your Child Find Success at School: A Guide for Hispanic Parents, Cómo Ayudar a su Hijo a Tener Éxito en la Escuela: Guía para Padres Hispanos.* Hine conducted a qualitative study of 10 Puerto Rican high school students and their parents to ascertain: What factors in the family learning environments of gifted Puerto Rican high school students support high achievement? Major keys to open the doors to success at school included:

> **Key #3:** Parents must make their children understand that they believe their children will be successful both in school and, later, in the workplace.
>
> Parents of high achievers had high educational and occupational aspirations for their children. They let their children know they expected them to do well in school and to gain the knowledge and skills necessary for a good occupation. Parents stressed the importance of getting a good education to reach these goals. They often mentioned their own employment and personal aspirations which served as a role model for their children. (p. 12)
>
> **Key #8:** Parents should become involved in their child's school and extracurricular activities. By encouraging a "social bond" with the school and the community, they will help him or her to grow in confidence and self-esteem.
>
> All of these high achieving students were actively involved in both school and extracurricular activities, and their parents encouraged and supported this involvement. Being "involved" helped them develop a positive self image and a sense of commitment to school and community. (p. 20)

One traditional marker of success is to continue one's education beyond high school. Children may or may not be familiar with all the prerequisite tasks necessary for pursuing a college education, especially if they are first generation college attendees. They need advice about the realities and timing of the whole process, and they and their parents can find it in a book by Wright and Olszewski- Kubilius (1993) entitled *Helping Gifted Children and Their Families Prepare for College: A Handbook Designed to Assist Economically Disadvantaged and First-Generation College Attendees.* Once the applications are secured from potential institutions matching the children's interests and skills, letters of recommendation are requested and completed, and transcripts are secured, it is time to brainstorm potential questions to college admissions representatives:

- What is the average class size for freshmen courses?
- Are most undergraduate courses taught by graduate students or faculty?
- Do you have to be accepted for admission before you are awarded financial aid?
- On the average, how much of the actual cost of attending the school does financial aid typically cover?
- What are some of the unique qualities about the college?
- What academic support services are offered to students?
- What student groups are available on campus? (p. 67)

Getting ready for college may be a long, arduous process that seems far away for some or too close for others. Students need to consider what talents, abilities, and interests they will bring to the college or university and pose questions to interviewers that present a clear picture of the organization and academic setting. Parents and children can read and review the book by Wright and Olszewski- Kubilius to gain a wealth of how-to information about pursuing college. The book was prepared as a service for parents and children and it has helped several young people realize their dreams.

Nurturing the talents, abilities, and interests of children is a continual process that brings rewards at all ages. College entrance may be regarded as a tangible reward for hard work and high aspirations; others may view college entrance as a time of reflection on a question or comment their child made at a young age that indicated potential talent. In *Parents Nurturing Math-Talented Young Children* and *Teachers Nurturing Math-Talented Young Children* (Waxman, Robinson, & Mukhopadhayay, 1996a, 1996b), the authors describe a two-year study of preschool and kindergarten children involved in biweekly Saturday Clubs designed to enrich their mathematics experiences. Some of the students were "deeply passionate about numbers, as is evident in their questions, in their tendency to ignore what the rest of the class is doing while they are absorbed with a problem of their own and in their smiles of satisfaction when they make sense of something puzzling" (p. 1). The young, math-prone students came to the attention of the researchers through nominations by teachers and parents. Parents completed application forms, recording verbatim comments such as the following that reflected their child's mathematical view of the world:

> At four years old, he could identify all the states of the US by shape alone and place them appropriately without outline clues.
>
> Has recently shown interest in written music--how notes and rests divide a measure.
>
> She and her father had a lengthy discussion on Avogadro's number, which is now called Avocado's number. She can tell time and write Roman numerals up to 20 easily.
>
> Will multiply and divide using factors up to 10 and various combinations of numbers. All this is done in his head . . . the process is what interests him. (pp. 3-4)

The children's inquisitiveness about all things mathematical was bolstered over time through "playing with wonderful ideas." The soon to be released books by Waxman, Robinson, and Mukhopadhayay contain numerous ideas to spur mathematical thinking and doing. Teachers and parents will find these books a wonderful resource for schools and homes. They will revel in the character profiles of the young students involved in the Saturday Clubs known as Math Trek. JoAnne is just one example:

> JoAnne hated writing. The worst parts of first grade for her were all the requests to write. Her mom was puzzled by JoAnne's dislike of writing, for she loved to read and draw. Her favorite subject, however, was math. During one of the second year Math Trek sessions, the children were asked to make a drawing and write a story that would make sense of some simple equations. One equation was 0 - 3 = -3. JoAnne loved negative numbers and was intrigued by the challenge of coming up with a plausible story. She spent a long time drawing a picture and then wrote a comical story about a man who had to dig three levels underground in order to get to a certain pipe. (1996b, p. 73)

The talents, abilities, and interests of children are visible at all ages and we hope that our research finds its way into the hands of more and more parents. Thus, we call upon the many practitioners in our network and ask that they, once again, share our work with parents. Yes, go ahead, copy this article and give it to a parent. Help us build the parent connection!

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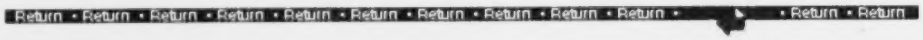
Gifted and Talented.



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A Parent's Guide to Helping Children: Using Bibliotherapy at Home

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There were nights when it seemed impossible to get Tara into bed. It was hard to distinguish what set her off, but the outcome was always the same; getting out of bed, asking questions, wanting a glass of water, all until her mother was quite annoyed. Then, quite accidentally, Tara and her mom came up with a new bedtime routine. On those hard to get to bed nights, Tara was allowed to pick two books to be read to her. The second book was always *Goodnight Moon* by Margaret Brown. This was a book that had a calming effect for Tara and the routine of the story reading helped her get ready to go to sleep.

This is just one way for parents to incorporate bibliotherapy into the everyday interactions with children. Bibliotherapy is the use of literature that addresses problems or issues current in the lives of children. For some children like Tara, a favorite story, poem, or song can be a comfort in a trying time. Introducing a new story or book can be equally as helpful for children because it helps to clarify feelings and validate emotions. Making up their own stories or modifying a favorite also can get children to talk and think about issues at hand.

Definitions

Bibliotherapy as a technique has proven effective in both the classroom and in child therapy (Borders & Paisley, 1992; Lenkowsky, 1987). Through reading, or being read to, a story similar to their own lives, children are able to experience and deal with an issue objectively which can then be applied to their own problems/issues. The stories should show the child there is a way out, others have the same issues, you are not alone. Bibliotherapy sends the message to the child that it is acceptable to talk about this and together we can work out a solution. Hébert (1991) cautions that the simple act of reading a story is not bibliotherapy. Follow-up discussions must be incorporated in order to reinforce the issue at hand. Added outcomes of such discussion include fostering interpersonal relationships and problem solving skills. Discussions provide a forum for the child to better understand what is being said in the story and to apply it to her/his situation. It is important to note that the ramifications of this technique are greater for high ability children because of their ability to empathize, which allows them to identify with the characters, to understand metaphor, and to become absorbed in the story with a meta-understanding of the issue.

Bibliotherapy is useful because it allows the child to step back from her/his problem and experience it from an objective viewpoint. It offers the child a safe avenue to investigate feelings. For an adult having to deal with a child in distress, it can also provide a nonthreatening way to broach a sensitive subject. Always remember, bibliotherapy is a conversation starter, not ender. It should be used to open up communication. Handing a book to a child in the hopes that she/he will understand your intention is not helpful. Connections need to be facilitated and open expression should be encouraged.

Who, What, When

Who should use bibliotherapy? Anyone who has contact with a child who is experiencing emotional turmoil or confronting a new issue that is confusing can use a technique like bibliotherapy. Counselors have used this technique quite successfully since the 1950s and 1960s. Lenkowsky (1987) points to its use as a planned therapy with three components: identification, catharsis, and insight. The use of bibliotherapy in the classroom seems to have its roots in the 1970s with the use of picture books with children (Jalongo, 1983). The popular trend in children's literature to include more emotionally laden and real-life subject matter has increased the use of bibliotherapy today. The quality of available

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literature is outstanding. There seems to be a greater awareness of real life issues and multicultural sensitivity among book authors and publishers. Not only are bibliotherapy approaches useful within the context of a classroom or therapy session, but more and more parents are finding it beneficial in helping their children deal with the stress of modern life. Taking the time to read a story with a child, if done in an empathetic, understanding atmosphere, can reinforce a positive sense of worth and increase the parent/child bond.

Schlichter and Burke (1994) point to two forms of bibliotherapy: developmental and clinical. Clinical bibliotherapy is employed by trained personnel, for use with children in therapy situations and is just one aspect of the treatment process that deals with deep problems. Developmental bibliotherapy is used to anticipate issues before they become a problem. For instance, reading a story about a child who is frightened about going to first grade with your kindergartner is developmentally appropriate and can prove to be helpful in allaying some of their fears. This type of bibliotherapy is useful with children who are progressing through the normal stages of growing up and who may benefit from an exploration into issues relevant to their age or experiences, e.g., bedwetting, nightmares, or fights between friends. It is when the issue becomes problematic for the child and/or family that professional help is required. If you find yourself asking questions such as the following, then maybe you need to consult with a professional. "Is this an issue I feel comfortable dealing with alone? I have tried everything I know, now what do I do?" A therapist may ask you to become part of the therapy by recommending to you certain books to read at home, but this will be in addition to the work being done in the office. The most important thing to remember is that your child is getting the help with the issue before it becomes a major life trauma.

Selection

For those parents who are looking for ways to use literature with their children, there are several sources for appropriate books for and about children. Some authors include bibliographies at the end of their works (see H°bert, 1991; Kerr, 1991; Silverman, 1993). One suggestion by Silverman is to consult a librarian who in addition to her/his own expertise, can point you to the resources like *Bookfinder 5: When Kids Need Books* (Spredemann-Dreyer, 1994). This work allows you to find books by subject, author, or title and includes items for children from 2-18 years. It is a helpful resource that is continually updated but just one example of many guides available to you. It is worth the trouble to explore the shelves of local libraries and bookstores; don't be timid about asking for help.

Using annotated bibliographies and suggestions by others is a good source for ideas on materials. The best way to select a story is to read the story. It may take time to find an appropriate book for use with your child. You want it to be closely related to the issue at hand, offer suggestions for coping strategies, and include a protagonist your child can relate to. Characters in stories are either humans or animals, ask yourself which will be more appropriate for your child? Can they make the leap from an animal character to their own life, or will they see such a book as babyish? The storyline and characters do not have to match your situation exactly, but be sure there is some commonality. There are many good stories available so don't compromise. Choosing a story that a child cannot relate to will negate your good intentions. Take your time, visit libraries and bookstores. Chances are you will find many more adults in the children's section than you anticipate!

There are also more formal criterion put forth by authors regarding the selection of books. Generally, selecting quality literature is of the utmost importance (Halsted, 1988). Choose books that are well written, clearly printed, and include artwork that is both relevant to the story and pleasing to the eye. Jalongo (1983) suggests there are three advantages for using literature: information, relevance, and acceptance. These three can also be used as critera to select materials. Ask yourself if the book or story a) promotes the exchange of information between adult and child, b) enables the child to make the connection to her/his life, and finally c) validates the child's feelings and responses to the crisis or issue at hand. Any book or story that incorporates any or all of these ideas would be appropriate to use within the context of bibliotherapy.

Taking Action

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Jane's dog ran off his leash and was hit by a car. Her father did not know how to explain to Jane that it was an accident and that sometimes these things happen. She was inconsolable; Riddles had been the family dog since Jane was a baby. A neighbor gave Jane a book called *The Tenth Good Thing About Barney* by Judith Viorst. Jane and her mom read this book about a little boy whose cat died. She was able to relate to how the boy in the story felt and tried to name ten good things about Riddles. Jane came up with 14 things and she and her mom drew pictures about each one. Now, whenever she feels sad about Riddles, Jane reads the book she made. Ziegler (1992) suggests that allowing the child to write his/her own story will help the healing process.

This example shows how one family dealt with the death of their pet. The bibliotherapy exercise was just one way the family helped Jane deal with Riddles' death. There were many tearfilled nights and lackluster days. Eventually, Jane got over the death of her friend, as would be expected, and the book was just one thing that helped her on her way. Immediate results cannot be expected. In fact, with some resistant children, this method will seem to fail miserably. Time is the critical factor. For some children it will take time for them to incorporate the ideas or even want to deal with the issue. Talking about emotions may be difficult and the child may be resistant but with the help from a caring adult, she/he can learn to deal with issues and not ignore them. Not attending to an issue can often lead to more problems down the line. Giving your child the space to explore issues in an open and trusting environment will further validate her/his feelings both about her/himself and you.

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Ziegler, R. G. (1992). *Homemade books to help kids cope.* New York: Magination Press.

Resources

Barrett, J. D. (1989). *Willie's not the hugging kind.* New York: HarperTrophy.

When Willie's best friend tells him hugs are silly, Willie thinks hugs are silly, too. So no one in Willie's family hugs him anymore. But Willie knows deep down, in spite of what Jo-Jo thinks, that he is the hugging kind.

Baynton, M. (1988). *Jane and the dragon.* Martinez, CA: Discovery Toys.

Jane wants to be a knight but everyone laughs at her, saying that girls can't be knights. The court jester is the only person who takes Jane seriously. He lends her a small suit of armor--which turns out to be just what she needs.

Bradman, T., & Ross, T. (1990). *Michael.* New York: Macmillan.

Michael was quite simply the worst boy in school. He was always late, usually scruffy, and never did

what he was told. His teachers had just about given up on him when one day they discovered that even the most hapless student can blossom.

Brown, M. (1989). *Goodnight moon.* New York: HarperCollins.

A little bunny says goodnight to each of the familiar things in his world.

Cohen, M. (1980). *First grade takes a test.* New York: Greenwillow Books.

The first grade is distressed by an intelligence test which fails to measure true aptitude.

Cole, B. (1986). *Princess smartypants.* New York: G. P. Putnam's Sons.

Not wishing to marry any of her royal suitors, Princess Smartypants devises difficult tasks at which they all fail, until the multi-talented Prince Swashbuckle appears.

Hess, D. (1994). *Wilson sat alone.* New York: Simon & Schuster.

A little boy always does everything alone and never with his classmates, until a new girl comes to school.

Hill, E. S. (1991). *Evan's corner.* New York: Viking.

Needing a place to call his own, Evan is thrilled when his mother points out that their crowded apartment has eight corners, one for each family member.

Jahn-Clough, L. (1994). *Alicia has a bad day.* Boston: Houghton Mifflin.

When Alicia can't seem to cheer herself up, she tries going back to bed.

Martin, B., Jr., & Archambault, J. (1987). *Knots on a counting rope.* New York: The Trumpet Club.

A boy learns about strength by listening to his grandfather and his own inner voice.

Most, B. (1990). *The cow that went oink.* San Diego, CA: Harcourt Brace.

A cow that oinks and a pig that moos are ridiculed by the other barnyard animals until each teaches the other a new sound.

Ross, T. (1989). *I want a cat.* New York: Farrar Straus Giroux.

Jessy must be the only girl in the world without a pet. And she wants a cat. Unfortunately, her parents think cats are crawly, creepy, yowly things. But Jessy isn't going to let that stand in her way, and she comes up with a wonderful plan.

Simon, N. (1991). *I am not a crybaby.* New York: Puffin Books.

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Children describe a variety of situations that make them want to cry, emphasizing that crying is a normal reaction.

Smith, L. (1991). *Glasses, who needs 'em?* New York: Puffin Books.

A boy is unhappy about having to wear glasses, until his doctor provides an imaginative list of well-adjusted eyeglass wearers.

Viorst, J. (1972). *Alexander and the terrible, horrible, no good, very bad day.* New York: Aladdin Books.

One day when everything goes wrong for him, Alexander is consoled by the thought that other people have bad days, too.

Viorst, J. (1971). *The tenth good thing about Barney.* New York: Aladdin Books.

In an attempt to overcome his grief, a boy tries to think of the ten best things about his dead cat.

Waber, B. (1972). *Ira sleeps over.* Boston: Houghton Mifflin.

Ira has to decide whether to bring his teddy bear with him when he sleeps over at Reggie's house. His dilemma is solved by a surprising revelation.

Willis, J., & Varley, S. (1986). *The monster bed.* New York: Lothrop, Lee & Shepard Books.

A little monster is afraid to go to bed because he thinks humans will get him while he is asleep.

Zolotow, C. (1972). *William's doll.* New York: HarperTrophy.

More than anything, Williams wants a doll. "Don't be a creep," says his brother. "Sissy, sissy," chants the boy next door. Then one day someone really understands his wish, and makes it easy for others to understand, too.

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The National Research Center on the Gifted and Talented
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Parents, Research, and the School Curriculum

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Six years ago my wife and I went through the proverbial "trading of roles" in our home. She went back to work within a full-time teaching position and I reduced the number of theatrical workshops conducted at schools around the state. Our two sons, Matthew and Nathan, were entering kindergarten and second grade respectively, and as we factored the economic advantages of the situation with our beliefs on child rearing we agreed that there should still be a consistent presence of an adult in the daily routines of our children. Breakfasts together, making lunches, greeting them at the bus stop, and general communication with the school became my domain. Accompanying this realignment of roles was a discussion on how parents nurture children at the various stages of childhood. Meal preparation, transportation, grocery shopping, etcetera were not the issues here but rather, the question, "What kind of nurturing role can a parent assume when both children are in school from 8:30-3:30?"

A child's initial entry into school causes a parent to ask him or herself, "What is it I wish my child to become?" While the child's daily absence out of the home often implies, "The school will generally do a good job of respecting your child's individuality while preparing him or her for a meaningful and productive future." Like most parents we had a general idea of what ought to occur in the academic portion of our sons' lives. As parents, we were hesitant to leave the development of this vision completely to the school. Perhaps this was because we were both teachers and realized the demands of curricular modifications upon a teacher's time; but actually it was because we, as parents, had exciting visions for our children and felt it was our moral obligation to reach for those visions. The school was viewed as a valuable resource in the process.

Admittedly, as a father, I questioned the significance of my contributions to nurturing which lay beyond the domestic aspects of the process. Aware that fatherly pride can evolve to a "fast track" parenting style, I was content to witness, via a journal, my children's interests and foster them during various episodes of directed playfulness. During one such episode I discovered Matthew's (our younger son) interest in the concept of numbers. At age three he had demonstrated that a set of 14 porch balustrades always equaled 14 regardless of how many different ways they were divided. *"See Dad? They all make 14 Dad. 3+3+4+4 makes 14 Dad. So does 7+7 Dad. 1+1+1+1+10. See Dad? See? They do."*

His interest grew and so in the June before his entry into kindergarten we contacted the school, a rural, K-8 program with 104 students. There was one teacher per grade which disallowed a choice of teaching styles within any particular grade level. How do parents advocate on their child's behalf given the "home court advantage" of a singular classroom style? Our solution was to resort to our vision that said "foster the interests and strengths of our children," as interests seemed to be part of what makes learning enjoyable and strengths figured into the development of potential. We approached the school psychologist and the kindergarten teacher to draw attention to some learning behaviors and inquire about having Matthew tested. Earlier experiences with our oldest son had made us aware that social skills were stressed in the curriculum and that continued development of our younger son's interest in numbers might not be facilitated at a pace or style he enjoyed. Fall came and following through on our initial request for testing seemed the typical thing to ask. The school complied and the results raised the potentially overwhelming litany of questions:

- *What does an IQ score represent? What does it predict?*
- *In a perfect school experience should there be a spread between aptitude and performance?*
- *What do 3.5 standard deviations mean?*
- *Why are the subtests useful?*

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Parents who are teachers can experience great cognitive dissonance when their comprehension of test results is not reflected appropriately in classroom practices. This was our situation and it became apparent that information was needed to present an informed opinion about our requests and to suggest a specific plan of instruction.

It was at this point that I made a telephone call to The National Research Center on the Gifted and Talented (NRC/GT) and discovered a veritable treasure trove of information in the form of user-friendly parenting packets, Practitioners' Guides, resource lists, advocacy associations, bibliographies, guidelines, and Research Monographs for making our decisions. In short, the availability of relevant information allowed us to reexamine the academic lives of our children and our roles as parents. It validated our observations, inspired our plans, and produced anger and anxiety; particularly with regards to our older son whose aversive responses to school had been looked at in a different light up until this point. Subsequently, Nathan was tested and the results revealed a shocking misinterpretation by parents and teachers of a child who was an aural learner and socially insightful well beyond his years, and whose requests for learning how to borrow and carry in arithmetic had been thwarted for 18 months. Nathan's daily emotional breakdowns were not a function of me failing in my new parental role after all, but an unarticulated realization that he was bored and did not fit into the behavioral norms of a large second grade classroom that had its share of student behavior problems. Nathan was nearly 8 years old, yet his younger brother's strengths were being tracked since the age of 3. The importance of having timely access to appropriate information was made clearer still in a personal way.

The situations of our two sons are representative of the formative and reactive ends of the spectrum with which information from the NRC/GT can be utilized. Information on curriculum compacting and acceleration provided by the NRC/GT has had, and continues to have, an extremely formative influence on our younger son's school experience. That is to say the information was available for use as a planning tool before the school year was too far underway. In contrast, our older son benefited from information about grade-skipping and socialization issues that allowed him to "escape" a situation that did not have the wherewithal at the time to accommodate his needs.

If parents and teachers of high achieving children would recognize research as a form of history in that it represents prior events and outcomes and that it has a predictive nature, they could experience a tremendous sense of empowerment and accomplishment in their work. Teachers and parents want to be known for doing a job well. In my new parenting role, I was particularly anxious about performance, especially the nurturing issue. The saving grace was information and the way it could be used within the curriculum by convincing classroom teachers to accept its practical value with respect to traditional classroom practices and my sons' educational growth.

A major lesson learned was that timely access to relevant and accurate information is crucial to the education of young children who learn differently. Information is more effective when used early within a planning process that sets goals for the future instead of one that reacts to current classroom practices. I found as a parent that planning for the future created an alignment of teacher and parental concerns that was not easily duplicated when information was simply provided in response to an immediate curricular concern. One step towards accessing information is to make copies available of the NRC/GT Practitioners' Guides via school information/bulletin boards, the pre-K screening process, parent packets, and school handbooks.

A second lesson was that information empowers its possessor. My wife and I had gone the next step and were pursuing the recommended readings on compacting, socialization, acceleration, and identification. We became consumers of books and articles on the subject of giftedness. Initial readings were *Guiding the Gifted Child: A Practical Source for Parents and Teachers* (Webb, Meckstroth, & Tolan, 1982), *The Academic Acceleration of Gifted Children* (Southern & Jones, 1991), and *Curriculum Compacting* (Reis, Burns, & Renzulli, 1991). The NRC/GT provided a certain amount of source credibility to our programming requests. We found that research-based information, the use of specific vocabulary, and an understanding of defensible practices in the field added parity in the school-parent relationship, especially when administrators were involved or major modifications were being proposed.

A third lesson was to use information with the teacher in an informing and a supportive way. Teachers are major direct service providers to children and influencing the educational experiences of my sons was not to be accomplished with a parental emotional wish list fraught with anxiety, but with concise, well defined, appropriately placed, factual information. If the NRC/GT could present hard data in a user friendly format, I as a parent could do the same.

And fourth, we watched in amazement how the consistent use of information over time creates geometric effects upon its intended purposes. Information on curriculum compacting given to the first grade teacher was used with our younger son, resulting in his mastery of the fifth grade mathematics curriculum without gaps in his knowledge. In second grade, he participated in the fifth grade math class, qualified to take high school algebra, and expressed an interest in taking "real" literature and science with his brother who was to be in sixth grade. What unfolded in June of that year was a 12 person Pupil Personnel Planning Team meeting that resulted in the Assistant Superintendent overruling the Director of Special Services' "no" vote on subject advancement. I believe this outcome was due, in part, to the articulated perspectives of the middle school teachers who had read much of the NRC/GT literature, observed its effect on our son's primary years, and were supportive of the proposal. The availability of research had changed attitudes and classroom practices among the staff which paved the way for Matthew's particular needs and other children's as well. Informed teachers can be fearless advocates despite central office policy.

Our youngest son entered sixth grade in the Fall of 1996, although he has completed the 6-8 curriculum and high school courses of algebra, geometry, algebra II, and chemistry. He loves school and the options he has now, one of which is to use the time made available from curriculum compacting to reduce his schedule and manage a fish farm breeding project at the high school.

In retrospect, the process my wife and I went through appears so very simple because an informed viewpoint clarifies a plan of action. It is not simple, however, because the process of becoming an informed parent or a teacher about high achieving students is fraught with sources offering good intentions, ineffectual empathy, misinformation, and little direction. Thus, two caveats in the "age of information" are: as a consumer of information you must determine the kind of information you need and actively seek it from a reliable source. And, two, do not presume the application of information in the classroom to be as easy as access to that information. To these ends contact with The National Research Center on the Gifted and Talented was a step in the right direction.

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The National Research Center on the Gifted and Talented
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Cluster Grouping Coast to Coast

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Cluster grouping is an administrative procedure in which identified gifted students at a grade level are assigned to one classroom with a teacher who has special training in how to teach gifted students. The other students in their assigned class are of mixed ability. Differentiated instructional opportunities allow gifted students to interact with their intellectual as well as their age peers. Through cluster grouping the intellectual, social, and emotional needs of the gifted students can be addressed.

Cluster grouping has become increasingly popular as a programming option to meet the needs of gifted students in heterogeneous classroom settings (Gentry, 1996; Hoover, Sayler, & Feldhusen, 1993). In 1993 current cluster grouping practices were examined in a nationwide survey. The purpose of the Cluster Grouping Survey was to determine how schools were implementing this programming practice.

The Cluster Grouping Survey had two components. The first, a general survey on cluster grouping was sent in August 1993 to 131 Collaborative School Districts associated with The National Research Center on the Gifted and Talented (NRC/GT) that noted in their application form for the NRC/GT network that their districts used cluster grouping within the regular classroom as part of the organizational structure of their gifted and talented program. Responses were received from 53% ($n = 69$) of these Collaborative School Districts representing 29 states. The second component of the Cluster Grouping Survey was a more detailed survey sent in September 1993 to 61 Collaborative School Districts that indicated cluster grouping was practiced in their districts at that time. Responses were received from 38% ($n = 23$) of these districts representing 15 states.

The first Cluster Grouping Survey presented three questions. Respondents were asked if their school district had a policy on cluster grouping. Of the respondents, 17% indicated having an official policy, 17% did not, 62% said they had no official policy, but that cluster grouping was practiced.

The second question posed was "How does your district define cluster grouping?" Multiple definitions were given. Less than 1% indicated they had state definitions, while 1% noted that students in specific programs or who had specific abilities composed a cluster group. A majority (98%) of the responding schools used a certain number or percentage of students to define a cluster group. Examples ranged from 4-6 identified gifted and talented students in a heterogeneous classroom, to a group of 3-5 students of the top 5% students clustered together. In a large city, 33% of each cluster class were students identified as gifted and talented. Another school district defined cluster grouping as a group of five or more identified students in a classroom, plus any "watch and serve" students (students who are displaying high potential).

The third question on the first survey addressed the grade levels where cluster grouping occurred. Over half (51%) of the respondents indicated that cluster grouping occurred most frequently in the upper elementary grade levels (grade 3-6) in their districts. Of the districts, 5% reported using cluster grouping in kindergarten and ninth grade, 32% reported the use of cluster grouping in the first, second, seventh, and eighth grades, and 12% indicated cluster grouping occurred in the tenth, eleventh, and twelfth grades.

The results of the first Cluster Grouping Survey indicate that while some school districts around the country practice cluster grouping, many did not have official district or school policies regarding its use. Most definitions of cluster grouping were based on a number or percentage of identified gifted and talented students within a regular classroom. The first survey also showed that cluster grouping is a

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practice used at all grade levels, especially in the upper elementary grades.

The second Cluster Grouping Survey examined a variety of cluster grouping issues in 23 school districts nationwide using this program practice. These issues included: the selection process of cluster students, special populations represented, selection and training of cluster teachers, differences between cluster and non-cluster classrooms, program options used, reactions to cluster grouping, academic and social/affective effects of cluster grouping, and advantages and disadvantages of cluster grouping. The respondents of the survey included: director/coordinator of gifted and talented programs (n = 12), instructional/educational specialist (n = 4), gifted and talented teacher/specialist (n = 2), assistant superintendent (n = 1), principal (n = 2), school psychologist (n = 1), and cluster teacher (n = 1).

Selection Process of Cluster Students

Methods for identifying students for cluster groups varied greatly from district to district. The methods listed were those used by many districts nationwide to identify students for other types of gifted and talented programming. Testing included use of the *Stanford Achievement Test* (*SAT*), *Wechsler Intelligence Scale for Children-Revised* (*WISC-R*), *California Test of Basic Skills* (*CTBS*), other IQ achievement tests, and placement tests. Teacher input was sought using behavioral observation forms and recommendations. Parent input was gathered through recommendations and informational forms. Grades and writing skills were included in academic performance, while other considerations examined motivation and student awards.

Special Populations

Responding schools were also asked about the special populations participating in their cluster grouping programs. The following shows the percentage of schools indicating the special populations served:

- Native-American-- 38%
- African-American-- 52%
- Hispanic-American-- 52%
- Asian-American-- 52%
- Pacific Islander-- 17%
- Economically Disadvantaged-- 82%
- Limited English Proficient-- 30%
- Learning Disabled-- 65%
- Physically Disabled-- 35%
- Underachievers-- 65%
- Emotionally Disturbed-- 35%

Selection and Training of Cluster Teachers

Principal discretion was the method noted 40% of the time in the selection of the cluster classroom teachers. Other selection methods included: rotation of regular staff, volunteers (based on interest and willingness), selection after training, former gifted and talented teachers, and peer panel selection. Of the respondents, 22% indicated that teachers needed to be willing to receive training in order to be a cluster teacher. Responses varied from state mandated teacher training to none. Training included district sponsored inservice, ranging from extensive (after school workshops, one week workshops, 1-3 days for beginning cluster teachers) to one day presentations. Additional methods of training cluster teachers included: attending state conferences and/or University of Connecticut--Confratute, graduate courses, reading articles, using gifted and talented consultants, and visiting other schools. Although several respondents (n = 4) indicated no ongoing inservice training, a majority (60%) of the districts offered some type of training. These included: monthly meetings, a quarterly study group and team meeting, gifted/talented inservices, cluster network/inservice days, and four follow-up training sessions per year. Occasional workshops and seminars, and attendance at state conferences were also noted. The districts with the most inservice support reported the greatest satisfaction with cluster grouping and the most positive reactions from teachers, administrators, parents, and students.

Differences Between Cluster and Non-Cluster Classrooms

All of the schools indicated that the major difference between the cluster and non-cluster classroom was in the greater "qualitatively different" instruction that was occurring. This included the accelerated presentation pace, the increased depth of enrichment activities and presentation of issues, and a compacted core curriculum.

Program Options Used

Content differentiation, thinking skills, and content enrichment were the most widely noted options used in the responding school districts' cluster grouping programs. Almost all (99%) of the respondents indicated using content enrichment, 91% used thinking skills, and 74% used content differentiation in the cluster classrooms. A variety of content differentiation methods were listed: more acceleration, compacting the core curriculum, more indepth enrichment, and more complex content. Also mentioned were acceleration of presentation pace, a greater focus on higher level thinking and reasoning skills, more pretesting of materials, and extensions of all lessons using higher order thinking activities. One district stated that the level of awareness of individual needs was greater, that collaborative teaching (cluster teacher and gifted and talented teacher) was stressed, and that whole class enrichment of all K-12 classes was ongoing.

Reactions to Cluster Grouping

Although all of the responding school districts indicated positive reactions of most teachers, administrators, parents, and students to cluster grouping, 30% also noted some mixed reactions. While one respondent said that ". . . by recognizing that high ability students have educational needs that must be addressed daily, teachers were given permission by the 'system' to utilize effective strategies and techniques every day with those students in their classrooms," another said some teachers were philosophically opposed to gifted programs in their district. One respondent noted, "Teachers continue to express concern about the difficulty they experience in providing differentiation within a classroom with a wide range of possibilities." This was less of a problem in schools that limited this range in the cluster classroom.

All of the school districts reported positive reactions by parents to cluster grouping, while only 1% also noted some negative reactions. Parents frequently commented on the positive reactions to the accelerated pace and instruction in the classroom. They believe that cluster grouping was successful in meeting their children's academic needs. Parents preferred cluster grouping to total heterogeneous classrooms and saw the need for grouping to ensure provisions for high ability students were available. One respondent stated that parents of less able students in the cluster classroom had commented on the improved attitude of their children toward school, while another indicated that parents of non-identified students often requested their children be placed in a cluster classroom. Negative reactions included remarks that some parents didn't see anything different happening; some parents of non-identified, high-achieving students didn't like it; and some parents preferred homogeneous grouping in specific content areas.

The reaction of administrators to cluster grouping was mixed, but most (69%) of the respondents gave positive reports. "Supportive," "favorable," "helpful to everyone," "proponents" were remarks noted. One respondent stated, "The administrators have led the way in allowing us to do whatever is best and works to benefit the students." Most respondents, however, gave a variety of administrative reactions including: active support, supportive if good things are happening for kids, and ignoring policy. One respondent stated, "Those with sufficient understanding of the needs of the g/t students support the grouping. Other responses vary dependent on personal beliefs and experiences." While administrative support was seen by several districts as critical to the success of cluster grouping, 13% reported negative responses by administrators. Administrator resentment of a special group, scheduling difficulties, and strong biases against programming for gifted and talented kids were comments given.

Nearly all (90%) of the respondents indicated gifted students were very positive about being in a cluster classroom. Comments such as "excitement with moving through material without having to wait for others to catch up," "enjoying their intellectual peers," and being "very eager to be challenged" were

related. Only two negative remarks were given. One indicated a few students developing a "superior" attitude, and the other was a student's social separation from friends.

Academic and Social/Affective Effects

Cluster grouping may have a positive effect on the achievement of all students (Gentry, 1996). This was the case in the Cluster Grouping Survey. Three categories of responses developed from the question, "What academic effects of cluster grouping have you observed?" For identified highly gifted students, the academic effects were all positive. Respondents listed positive effects for this group of students, including: more time to work together on appropriate tasks; higher class expectations; more indepth and quality products; increased motivation and learning; more opportunities for above level instruction; increased student responsibility and level of change, and finally, more time to work with intellectual peers. Positive effects were also noted for the whole class. Remarks included: ". . . others in class are stimulated," "class expectations are higher," "raises everyone's level of achievement," and "everyone benefits." Teachers also recognized the positive impacts. A typical teacher response stated "cluster grouping gives them [teachers] an opportunity to pace the curriculum faster, that training has helped instruction, and there is a better understanding of the learning process and how to challenge kids." Another response indicated cluster grouping "compels the teaching staff to do more formal differentiation of the curriculum," thereby increasing the academic levels of all. In a major city, achievement gains continued to occur in schools with cluster grouping programs that had clearly stated goals and objectives, ongoing staff development, curriculum differentiation, school-wide enrichment for all students, and parental involvement (Duncan, 1989). These findings concur with those in Qualitative Extension of the Learning Outcomes Study (Delcourt & Evans, 1994). Students in this grouping arrangement (Within Class) as well as Pull-Out programs "felt more capable in their academics, preferred more challenges in the classroom, and were more likely to want to work independently than their peers in Separate Class programs" (p. 4).

Except for two responses that indicated negative effects of cluster grouping (possible development of cliques and some "elitist" tendencies in cooperative learning groups), all the responses to the social and affective effects of cluster grouping were positive. These included: a focus on self-management and decision-making skills fostering a climate of caring and cooperativeness; a support system among peers; a productive, helpful environment that promoted an understanding that the world has many "different" people who can all get along; a better acceptance of being gifted, better self-esteem and friendships; an increased awareness of the talents of all students; an acceptance of students who are not age-peers (cross-grade clustering); and a recognition of students' self-confidence and self- reliance. One school district reported better support for academically talented students, both from their peers and the entire staff since implementing cluster grouping.

Advantages and Disadvantages

The Cluster Grouping Survey also asked the Collaborative School Districts about the advantages and disadvantages of cluster grouping in their school districts. The responses were many and varied. From cost effectiveness (students staying in neighborhood schools, better use of limited resources and time) to viewing the classroom as a "laboratory" for staff development and instructional practices, cluster grouping was seen by 100% of the respondents as an organizational option that offered improvement in many ways.

An increase in intellectual stimulation, challenge, and level of expectations for students were advantages listed. Students were also allowed to move rapidly through the curriculum and work in their interest area. In addition, positive consequences for teachers were noted, including teachers taking more responsibility for the needs of gifted kids and allowing them to group students by need. Administratively, cluster grouping was seen as easier to observe and to guarantee differentiation. It was a more efficient delivery of services; all students at all grade levels could be served.

Advantages of cluster grouping could also be found in the affective domain. A better understanding of the gifted and talented student was found, as well as being able to offer a more challenging curriculum. Better opportunities to address the psychological needs and concerns of high ability students were noted.

More and improved exposure to instruction and activity encouraged and fostered the abilities of all students. Many districts stated that expectations were higher for the whole class.

When they were asked about the disadvantages of cluster grouping, only two districts stated that they had not experienced any problems or disadvantages in their districts. Almost all (91%) of the respondents indicated difficulty in the implementation process. Several noted that it was difficult for traditionally trained teachers to change their methods of teaching. A lack of teacher training and funds for inservice were also mentioned. One respondent stated, "The move to heterogeneous grouping . . . is very detrimental to our program. We used to be able to service kids from several programs at once. If we do that within each class, the students who need differentiated curriculum only get 1/4 the service. Collaboration time has not been built into this new plan, and teachers feel too busy to work with us." Not meeting the needs of highly gifted or high ability non-identified students through this delivery method was also a concern expressed by 1% of the respondents. Resentment toward cluster teachers and gifted students was also seen as a disadvantage. Less than 1% of the respondents expressed concerns over cluster grouping leading to tracking and slighting students in non-clustered classrooms. One respondent stated that "theory was still better than practice in some schools."

Recommendations

The Cluster Grouping Survey found that many districts around the country are using cluster grouping in various ways and obtaining positive results. Districts exploring the cluster grouping option need guidance in planning an effective program, however. Kaplan (1974) developed a list of items that need to be addressed in planning a cluster group:

1. Develop criteria for selecting students.
2. Define the qualifications of, and the selection process for, the teachers.
3. Plan the differentiated experiences for the cluster of gifted students.
4. Plan for support services and special resources.

From the responses to the Cluster Grouping Survey, it is recommended that a school district adopt a formal policy on cluster grouping for gifted students before selecting students. Coleman (1995) also suggests schools examine the attributes of true cluster grouping during the planning process.

As Kaplan indicated, the selection of cluster teachers is very important. Weber and Battaglia (1982) list qualities a cluster teacher should have, including a willingness to: understand the unique attributes and needs of talented students; be intellectually alive; be creatively productive; be flexible and willing to find appropriate outlets for student products; be attuned to the process of teaching, not just the content; be a role model for students; and be able to foster positive feelings among students and faculty toward the gifted and talented program. Rogers (1991) adds that the cluster teacher must also be sufficiently trained to work with high ability students, and be given an adequate amount of preparation time. The cluster teacher should also be willing "to devote a proportionate amount of classroom time to the direct provision of learning experiences for the cluster group" (p. 4).

In planning and providing for the experiences of gifted students in the cluster group, Coleman (1995) suggests that cluster teachers use the following strategies: curriculum compacting, acceleration of the content, enrichment with the curriculum areas, interest-based learning, and opportunities to work with other high ability learners across grade levels. Delcourt and Evans (1994) state that "curricular and instructional provisions for the gifted must be carefully maintained lest they disintegrate into a no-program format" (p. 9).

Support and special services are essential components for cluster grouping to be effective. Responses from the Cluster Grouping Survey indicate the need for these services. Coleman (1992) states that a cluster teacher should have access to a consultative/collaborative teacher who is a specialist in meeting the needs of high ability students. Access to counseling services is also necessary to meet the social and emotional needs of the cluster students.

The results of the Cluster Grouping Survey support research studies (Gentry, 1996; Hoover, Sayler, &

Feldhusen, 1993) that gifted students do benefit from this program approach. Planning and delivery of the services need to be carefully considered, however, if cluster grouping is to be successful in meeting the needs of high ability students in regular classrooms.

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